PREPARATION OF COASTAL MANAGEMENT INFORMATION ASSISTANCE DOCUMENTS

For The

OFFICE OF COASTAL ZONE MANAGEMENT

NOAA

By

The Traverse Group Inc.
Ann Arbor, Michigan

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SUMMARY

By 1965 technological advances and growing resource needs made it clear that the coastal lands and waters of the United States were one of our most important resources, but that without comprehensive planning and management, maximum utilization would not occur and waste or misuse could occur.

From this increasing awareness and concern emerged the Coastal Zone Management Act of 1972, which established a mechanism for the creation of the necessary coastal zone planning and management programs at the state level. The Act specifically requires that a mechanism for the protection of coastal waters be established.

However at this time, virtually no organized information or technical assistance is available on the specific problems and opportunities for coastal water planning and management. At best, limited techniques for community and land-use planning are being applied in a land- and shore-oriented effort by the states, with little understanding or ability to achieve the actual specified objectives of the Act: the protection of coastal waters.

Members of The Traverse Group Inc. (TGI) have been conducting university-based research and direct field experimentation on coastal management for the last five years. It is now essential to incorporate an addition focus on water-related planning and management by utilizing this expertise to develop the technical assistance necessary for this new approach.

This document proposes to develop a series of technical assistance documents that relate to both the program development and the program implementation interests of the Office of Coastal Zone Management, NOAA, U.S. Department of Commerce.

The primary emphasis in these documents will be upon the development of information packages that state and local government agencies can utilize either in developing state coastal zone management programs or, of increasing importance, utilize in dealing with the on-going management problems that are encountered in implementing such programs. The individual documents will be part of an integrated effort and as such could serve as "chapters" in a coastal issues "handbook" that OCZM can produce and make available to the coastal states.

The effort proposed here covers two main categories:

1. Preparation of several technical documents pertinent to state coastal zone program development and implementation efforts.
2. Consulting services on additional information needs and problems relating to programs sponsored by the Office of Coastal Zone Management.

The Traverse Group proposes to carry out the various tasks described in this document and to supply the necessary services and materials on a fixed price basis. Each of the proposed technical documents or "chapters" would be provided in typed form suitable for typesetting to be reproduced in volume by OCZM.

INTRODUCTION

Subsequent to the passage of the Coastal Zone Management Act in 1972, many states had initiated development of management programs supported primarily with Section 305 program development funds. A large amount of information has been developed in the process, much of it quite valuable.

However, the states are now moving toward implementation and with it a host of day-to-day decisions that will require specific technical assistance, not general concepts. If technical assistance publications or other tools are to be utilized in the implementation stage, they must be designed as working tools for use at the state and local level.

There is another consideration in determining what should be provided to the states in the form of technical assistance. The Coastal Zone Management Act clearly intends and requires that planning and management efforts be directed toward coastal waters. While coastal areas have significant land and air management problems as they house a majority of residents and industry, the purpose of the Coastal Zone Management Act is to protect coastal waters.

Members of The Traverse Group perceived the need for coastal water management assistance as early as 1970 and began research and field testing of techniques. However, those efforts were only a small beginning; today, the needs for information and assistance to the states are much more important.

Today, there is not only interest, but also a specific and pressing need for a new type of technical assistance. The Traverse Group, being at the forefront of coastal water management research and actual experience, proposes that it provide a comprehensive coastal management information and technical assistance package to the Office of Coastal Zone Management to be used with the various states and others requiring technical assistance. The focus of this proposed work would be an integrated series of technical documents dealing with various coastal management issues.

These documents would be prepared so that a single package or "handbook" format could be used by OCZM if they so desired, e.g., we propose a series of written products and related information services which will provide OCZM with a broader, yet more selective ability to respond to coastal program assistance requests. These products could be considered "chapters" in a technical manual or "handbook" on coastal water planning and management. Each chapter will address a specific critical topic that has been identified as one which is important to the coastal states in developing their individual management programs.

The content of each of these proposed "chapters" is discussed in the following sections:

A. Coastal Water Management

While many states have emphasized and continue to stress both the land and shore elements of the coastal zone, the intent, history, and language of the Coastal Zone Management Act are clearly directed at managing the waters of the coastal zone. The complexities of land/air/water interactions are only now receiving extensive attention in the physical sciences and have been virtually unnoticed in management.

The problem is serious, for without more information and direction, many state coastal management programs may tend towards duplication of other land-oriented federal programs without establishing the required water management and protection envisioned in the Coastal Zone Management Act.

There is little available information. Through 1974, the work of members of the Traverse Group represented one of the only efforts in the nation. The only published work on the problems of surface water management was produced by a member of the Traverse Group while a University staff researcher. Only during the last year has a more general interest developed in research on surface and subsurface water management problems and techniques. Many land management techniques do not directly translate to water usage problems, and if casually applied, may even aggravate the situation.

Those who read this proposed "chapter" will, perhaps for the first time, see coastal management as a water-oriented management effort, and be encouraged to "see" water problems as having

many connections with more traditional land decisions. Consideration will be given to how coastal water management relates to other water-land programs such as the Section 208 efforts of the Environmental Protection Agency. With an emphasis upon implementation problems, this document will show how to orient analysis and action towards the water management aspects of more general coastal management objectives.

The document will draw upon our research and experience, combined with the knowledge of the Office of Coastal Zone Management, to create a new basic document of a pragmatic, technical nature, on resource management. It will discuss the relationship between traditional land use planning and coastal zone management. Methodologies will be emphasized for the purpose of insuring that each land-based program is systematically reviewed and coordinated so as to minimize adverse impact upon coastal waters. It will also establish a framework for developing a specific coastal water management program, as an element in coastal zone efforts, which indicates both development potentials unique to water areas as well as special protection or management problems.

Content

- What is water management, what is its history, what could it be, what are the problems that fall under this category?
- What does the Coastal Zone Management Act say?

- How does this concept relate to the specific requirements of the Act?
- How could it relate to coastal management problems in general?
- What are major benefits/problems?
- Case examples (perhaps including an artificial model to clarify the need for a special emphasis on water, not just land, and on interactive nature of the interface).
- Management checklist (how to find out what water programs already exist at local, state, and federal levels, how to determine direction that a particular state might take on water management, how to get started).
- Information sources (annotated bibliography and key contact people).

While this report will not provide all the answers for each specific state, it will be direct and specific, and allow each state to determine what it needs to know in order to develop water management as an integral part of its coastal program.

B. Standards as a Management Tool

There is an increasing need to consider how to achieve actual administrative control over all coastal activities, especially water activities where major expansion can be expected and where there is already a complex historic mixture of jurisdictions and mandates.

Standards, especially in the fields of air and water quality management, have been developed as management techniques in achieving certain resource use objectives. It is of critical importance to perceive that standards can apply not just to a single biological, geological, or chemical system; e.g. as a means for achieving certain water quality levels or protecting a critical wildlife area, but they might be used to help local governmental administration of coastal programs, or for insuring and protecting effective public participation. When used properly, standards can allow control of a broad spectrum of activities over a large physical area involving a multitude of participants. This clearly is what faces the coastal manager, and standards must be more fully understood in order to be used effectively.

As an introduction to the topic, this publication will discuss existent standards which the coastal management program will have to recognize and integrate into the coastal program. Specific standards relating to effluent content will set the stage for a discussion of who sets standards, what standards already exist that the state must respond to, and

how the idea of standards can be combined with such techniques as capability analysis to implement state control over coastal use. Reference will be made to ports and harbors and to energy facilities. Consideration will also be given to how standards as a management tool can achieve other objectives of the Coastal Management Act, such as citizen participation and involvement of local governmental units. It is by expanding standards to achieve administrative and socio-economic goals, as well as biological or chemical ones, that standards show the most promise for coastal management.

Content

- The emergence of standards as a management tool and technique.
- What the Coastal Zone Management Act says about standards.
- How standards could relate to the requirements of the Act.
- How standards could more generally relate to coastal management problems.
- Problems and benefits.
- Examples, including development of hypothetical conceptual "model," involving a procedural standards example.
- Management checklist.
- Information sources (annotated bibliography and key contact people).

The reader of this document should be able to perceive if standards might be an appropriate solution for his particular situation and if so, under what conditions. He will also know what would generally be involved in developing standards in a legal, political, administrative, and technical sense. The document will provide a good background for how to go about getting the additional help or information that will be needed to establish standards, and how such standards, if established, will relate to the coastal management program.

C. Suitability/Capability Analysis

The state coastal manager is faced with two basic charges, and increasingly they seem to be in direct conflict with each other. On the one hand coastal waters and associated human activities and natural systems are to be protected. On the other hand a place in the coastal zone is supposed to be provided for more and more activities, such as energy facilities, ports, and harbors.

Several techniques for developing a "best" combination of activities in various biological or social activity arenas have been developed in recent years. The basic concept is that if the capacities of various human and natural systems can be identified, then minimum negative impact and maximum utilization will result.

One of the most promising concepts, especially for water resources, is the idea of capability or suitability analysis. Each use-activity has a set of functional needs and a set of probable or possible social, economic, and biological impacts. In a similar fashion, each cultural and natural element that makes up the existent coastal zone has a specific tolerance for various inputs. By careful matching of cultural and natural capacities with the proposed uses, it is in theory possible to arrive at an optimal development combination.

Seen primarily as protective techniques, capability and suitability analysis has most often been used in a reactive and prohibitive mode. Yet, it can be used positively to

facilitate increased resource development, when applied not just to resource areas, such as wetlands, but to desirable activities defined by each state, such as specific types of recreation or industry. These are potentially powerful tools that could relate directly to such concerns as critical areas, involvement of local government, the use of standards as management tools, recreation, and water management.

There has been very little written about how to use these concepts within the very real legal, administrative and political constraints facing state coastal managers. Also, little work has been done on using these techniques as positive tools to allow increased use of resource areas. This document "chapter" will describe a variety of alternative capability techniques, and an extensive information directory. Primary emphasis will be upon how to undertake some version of capability analysis in order to deal with the wide variety of management decisions which will face the coastal states in Section 306 programs. Special emphasis will be upon water management considerations, and cross reference made to the specific problems of energy facilities siting and port or harbor siting.

Content

- What is capability-suitability analysis. . . general concept, then specific developments in recent years, what are people attempting to do with this concept?

- What does the Coastal Zone Management Act say about this?
- How does it relate to major requirements of the Act?
- How could it relate to state coastal zone management programs?
- Examples where available.
- Problems and advantages.
- Management checklist.
- Information sources (annotated bibliography and key contact people).

Those who read this chapter should be able to understand just what capability analysis could mean in terms of coastal zone management. How it has been used in other fields will be explained, but emphasis will be upon directing it as a tool to coastal management problems. Sufficient information will be provided to allow the state manager to know if this tool may be of use to one or more of his problems, how it relates to other tools, and how to implement it. Also provided will be a directory to people and information who can provide additional help.

D. Ports and Harbors

Ports and harbors have long been a major use of coastal areas. Recently surface traffic has increased to the point where major navigational hazards exist, and new ship technology suggests that larger craft may soon aggravate this problem. The location, design, and operation of ports and harbors then becomes not just a land or shore problem, but a complex coastal zone problem involving land and sea linkages.

Also, since ports and harbors have long been in existence, they tend to have complex administrative and legal infrastructures, many of which presently lie outside of coastal zone management. But no coastal planning and management effort can assure protection and wise use of coastal waters without some direct and effective linkage with ports and harbors expansion, development, and operation. Relatively little has been written that can guide the state coastal zone management manager with respect to the methods by which port needs and development impacts can be incorporated into the coastal zone management program development process. The multiple effects of ports through their associated industrial/commercial development patterns have been observed but not really related to the requirements of the Coastal Zone Management Act.

This document would provide the state coastal zone manager with a tool to deal with this pressing and complex issue. Ports and harbors would be broken down into a classification of types, and the administrative, physical, and impact

characteristics of each type described. The linkages between the public and private sector, between local, state, and national government, as well as international interests, would be indicated clearly. The important role of port authorities and the need to relate this historical role to coastal management program development will be examined closely in this effort.

A step-by-step method of tracing out a state's individual situation would be provided, along with a list of publications and information sources of direct assistance to coastal management efforts would be provided. But most important, tying all of this material together, would be a conceptual presentation of how ports and harbors relate to other coastal zone management problems or issues; the alternative ways in which working connections can be made; and alternative methods of establishing a water zoning management system to deal with the problems and opportunities of ports and harbors. Cross reference will be made with the energy facilities siting work, but full coordination will be left to the final Water Use Management publication.

Content

- Current status of port planning and development.
- Role of ports in coastal zone development patterns.
- Effects of port planning on need to balance economic growth with multiple use patterns already in existence.
- Regional role of ports as opposed to local resource perceptions and needs.
- Experience of other states in developing compatible port development programs in connection with

recreational, cultural, and other requirements of coastal resource uses.

- Management checklist for determining important cause-and-effect mechanisms with respect to coastal zone program development.
- Information sources for further consideration of port development problems and solutions, case histories.

The reader of this publication should be able to view port and harbor development and operational impact in the context of a state coastal zone management program.

E. Energy Facilities Siting

One of the most pressing national problems is that of energy: its use, its storage and distribution, location and processing of raw materials, and possible impacts of each stage in the energy cycle. And of all coastal uses, energy facilities, especially new ones, provide the greatest single potential for disruption: for political, social, economic, and biological impacts of the highest order.

Yet the coastal zone, including its water resources, also provides opportunities. New energy sources, new siting options, new methods of operation, distribution, and storage: these suggest that energy facilities must be seen not only as a problem of minimizing coastal impact, but also as a creative opportunity to suggest new directions for energy production and siting.

Major decisions as to whether such facilities should be located in coastal areas, competing with and perhaps precluding other desirable coastal uses, must now be made. And if coastal locations are indicated, as will often be the case, there remains the question of where and how such facilities should be located. Expansion of technology allows serious consideration of inland, onshore, or even offshore facilities, each with benefits, problems, and consequences.

One of the primary, initial problems in considering the energy facility location problem is the issue of siting criteria, e.g., what are the measures and factors involved in determining the location of energy facilities in the coastal zone? There has been some work carried out with respect to energy siting,

but this needs to be closely reviewed with respect to various coastal management program development issues.

This document "chapter" would essentially provide a comprehensive review of existing, known techniques for analyzing energy facility siting. It will also cover those techniques planned for siting of energy facilities. An extensive literature review and survey of selected research projects would be carried out. Of prime consideration would be energy facilities, such as nuclear power plants, conventional electric power plants, and outer continental shelf oil production. The information gained in this effort will be summarized in a form that will be of assistance to coastal managers in better understanding their own specific energy siting problems. This work will lay the foundation for future, more site specific analyses that are needed (see note at the end of this section).

Content

- Relationship of energy facility siting to requirements of Coastal Zone Management Act.
- Review and analysis of existing energy siting criteria.
- Discussion of known impacts and known management responses to various energy facilities in different coastal systems.
- Discussion of administrative, political, and legal difficulties of coastal zone management influence on energy facilities siting issues.

- Development of a preliminary decision matrix of basic management issues for given types of energy facilities.
- Information sources, including annotated bibliography, ongoing research, and present management alternatives.

The reader of this document will gain a better understanding of several alternative management strategies and/or siting criteria for managing the impacts, both positive and negative, of energy facilities siting decision. What can be expected to happen, what has been done to minimize negative impacts, what is now being researched, what information is available will be included in a presentation of how a coastal management program can influence the siting and operation of energy facilities located within the coastal zone.

Note: It is felt that the coastal manager is faced with two distinct problems when dealing with energy facilities. First, there are known energy facilities, where the probable impacts, "best" location and siting, and responsiveness to alternative management strategies may be known. This publication should, in a relatively short period, be able to collect this information within the context of coastal management. But secondly, each state, each local unit of government, faces a series of unknown problems relating to energy facilities, and they will only become apparent as new technologies, site-specific impacts, and changing public policies begin to interact. At that point a different type and degree of technical assistance will be needed.

The Traverse Group suggests that each state be provided now with this first type of assistance, as proposed here above. We also suggest the Office of Coastal Zone Management consider somewhat later, a separate site-specific technical assistance program in which assistance would be provided at the field level in tune with specific state energy siting needs.

F. OCZM Information System Analysis

As the coastal states move toward Section 306 implementation, they increasingly are going to face day-to-day planning and management problems that will require increasing amounts of technical information assistance. The Office of Coastal Zone Management is one logical focus of needed information and assistance, and has already a considerable collection of coastal resource information.

To be useful on an advisory response level, this information collection must be organized in specific ways, corresponding to the various state needs. As the need for protecting coastal waters becomes more appreciated, this information also needs to be organized toward providing water management assistance.

Currently the Office of Coastal Zone Management information system is not specifically designed to respond to the increasing number of daily information requests, nor is its information categorized or oriented towards the problems of water management.

Having spent several years in the development of information systems design concepts, and with a special understanding of water management problems, members of The Traverse Group propose a cooperative consulting effort with the Office of Coastal Zone Management to help organize, catalog, and update its present information system, and also propose to offer suggestions for expansion and improvement of that system in the future. This work would be a logical extension of the current contractual effort that The Traverse Group is carrying out for OCZM's information program.

The work to be carried out in this effort would directly support the preparation of the various "chapters" described above. Each of these efforts will make extensive use of the information collection at OCZM.

CONCLUSION

The Coastal Zone Management Act of 1972 comes at a critical time in our nation's need for shore and water resources. As various coastal states move toward actual implementation of management programs under Section 306 of this Act, they are going to need considerable guidance and assistance.

Unfortunately, while legislation to deal with the growing problems of coastal resource use and protection has been quick in coming, suitable information and assistance is in most instances inadequate. Much of the information and management concepts are derived from land planning or urban planning, and fail to understand the critical air/land/water interface characteristics of coastal planning and management decisions.

The content and quality of what is currently available does not match the very pressing coastal need for direction, methodologies, and assistance. The Traverse Group, with a unique background in both research and field application of coastal planning and management techniques and concepts, proposes to provide the Office of Coastal Zone Management with a series of appropriate technical assistance tools.

Format

The detailed design of each document will not be chosen at this time, since for maximum impact each "chapter" should be shaped to reflect the specific nature of its topic. However, to the degree possible, an element of continuity among each document will be achieved, primarily through the use of common basic elements:

1. Title page.
2. One-page description of what user should expect from the document.
3. Index.
4. Introduction to topic.
5. Relation to Coastal Zone Management Act.
6. Use as a management tool in implementation efforts.
7. Problems and benefits.
8. Examples where available and appropriate.
9. Further discussion.
10. Decision checklist.
11. Information sources (including annotated bibliography and key resource people/agencies).

The documents will be written so as to be clear and concise, and will be cross-referenced where appropriate. Emphasis will be on the use of the various concepts as management tools, and in particular, as tools for dealing with the problems of program implementation.

While the exact length of each publication cannot be determined until at least first-draft stage, every effort will be made

APPENDIX A

PUBLICATION DESIGN FOREMAT

Introduction

Unlike previous publications in the field of coastal zone management, the various documents or "chapters" described above will be directed specifically at professional coastal zone management staff members at the state and local government level. Several concepts or techniques which in some instances have been previously described in planning literature will now be directed and focused at real-world problems facing the state attempting to establish and implement a coastal management program.

When the coastal manager has finished reading one of these documents, he should know:

1. Clearly what the concept or technique is.
2. How it may apply to the various requirements of the Coastal Zone Management Act.
3. A variety of ways in which it might be applied to Section 306 implementation efforts.
4. A pragramtic checklist to help each state identify the applications of each tool to their specific needs.
5. Where to get additional help and information on this topic, including people, agencies, organizations, and publications.

to keep them as short as possible, based on our field experience which show that such publications have utility as working tools only so long as they are short and clear.

In each of the proposed document preparation efforts, The Traverse Group intends to fully coordinate with the latest efforts of the Office of Coastal Zone Management and any other federal or private efforts in the area under study. The Traverse Group recognizes certain ongoing efforts by OCZM staff and it is intended to build upon these efforts rather than duplicate them, blending them into a product especially useful for coastal program implementation.

It is planned to use other consultants to help prepare sections of the subject documents or to review written material. In some cases complete sections may be prepared by other consultants to The Traverse Group and that work coordinated and integrated into the final document.

APPENDIX B

QUALIFICATIONS OF PROPOSER

The Traverse Group Inc. (TGI) is a group of university-oriented professional consultants with extensive experience in research in resource management issues and environmental quality assessment.

TGI has consulting associates at a number of universities around the nation, providing a solid base of expertise and experience in a number of disciplines.

Members and associates of TGI have been involved in dissemination of resource planning techniques and information and have extensive experience in research on resource management concepts. Members have numerous contacts at the federal, state, and local level, broad experience in working with units of government, and have been extensively involved in development of new planning information concepts.

TGI is uniquely qualified to carry out the tasks described in this proposal. The professionals who will be involved in this project have had extensive and unique experience in the field of coastal zone management analysis. The nature of the proposed project lies primarily in the production of highly specialized information-conveying documents that will be produced by The Traverse Group. These documents will be oriented specificially towards elucidation of various issues facing state coastal zone managers and will provide a series of urgently needed techniques to assist the states in developing coastal zone management programs. The experience and expertise of The Traverse Group will allow these products to be prepared quickly and efficiently.

The experience of the principal participants in the proposed effort involves a wide range of coastal management related activities at the local, regional, state, and federal levels. With respect to the production of the specialized publications dealing with coastal zone management issues, the members of The Traverse Group are uniquely qualified. Of the few related or similar publications written in the past, members of The Traverse Group have been responsible for the bulk of these.[1] Members of The Traverse Group have authored or been major co-authors of all the major published works on coastal zone management. This includes the first comprehensive work on coastal zone management activities in the U.S.,[2] the first technical/resource management book dealing with coastal zone management,[3] the first comprehensive text-type document dealing with the basic process of coastal zone management[4] (this document was prepared under OCZM funds).

Traverse Group members have been recognized nationally as leaders in coastal zone management analysis. At the recent OCZM

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[1] Sewers and Shorelands, Planning Information Bulletin #1, University of Michigan, Coastal Zone Laboratory, 1974; Planned Unit Development Ordinances, Planning Information Bulletin #2, University of Michigan, Coastal Zone Laboratory, 1974; A Time of Choice: Basic Issues, University of Michigan, Sea Grant Program, 1973; A Time of Choice: Recreation, University of Michigan, Sea Grant Program, 1973; Management and Institutional Concepts for the Grand Traverse Bay Shorelands System, University of Michigan Sea Grant Program, 1972.

[2] A Description and Analysis of Coastal Zone and Shoreland Management Programs in the United States, University of Michigan, Sea Grant Program, 1972.

[3] The Water's Edge: Critical Problems of the Coastal Zone, Massachusetts Institute of Technology, 1972.

[4] Coastal Zone Management: The Process of Program Development, Coastal Zone Management Institute, 1974.

Workshop on Coastal Water Use Management (fall 1975) one of the TGI members was the principal speaker and discussion leader. (Note that this subject is one which is proposed as a document or chapter in this proposed project.)

Members of The Traverse Group who will be engaged in the proposed effort have extensive contact and familiarity with state and local coastal zone managers and planners. As an example, members of The Traverse Group are in close contact with coastal management staff members in such key states as Maryland, Michigan, California, New Hampshire, Delaware, and Texas. This already existing familiarity will enable the proposed work to be carried out quickly and efficiently for OCZM. Participation of TGI in this effort provides OCZM with a group capability that is well up on the learning curve of coastal management analysis.

The following will be principal participants in the proposed effort:

Dr. John M. Armstrong - Dr. Armstrong will be a principal technical consultant on the project and will also serve as consulting co-director of the project to help provide overall coordination and leadership.

Dr. Armstrong is also Associate Professor at The University of Michigan and Director of the Coastal Zone Laboratory there. He is a principal research consultant to The Traverse Group. Dr. Armstrong has served as advisor and consultant to local, state, and federal agencies in coastal management problems. He is a member of the Coastal Shorelands Advisory Committee and author of several articles and reports on coastal zone manage-

ment. He is a principal consultant to the United Nations on coastal zone management programs in several overseas nations.

Mr. Peter Ryner - Mr. Ryner is coastal zone planning research coordinator for The Traverse Group and as co-director of the proposed project he will be responsible for the production of the major publications described in this proposal. In addition to carrying out writing and analysis, Mr. Ryner will also coordinate the activities of other reviewers and consultants.

Mr. Ryner has worked extensively with local and state agencies in developing technical assistance efforts for coastal zone management problems. He is the author of several technical and planning assistance publications dealing with a wide variety of coastal related issues. He was formerly a Principal Research Associate with The University of Michigan's Coastal Zone Laboratory.

Mrs. Cheryl Alexander - Mrs. Alexander is technical information services consultant to The Traverse Group. She will assist OCZM in developing and structuring its information resources and will participate in all of the substantive technical areas proposed here.

Mrs. Alexander has considerable experience in developing and implementing information programs in coastal related subject areas. She has organized a unique collection of information materials pertaining to coastal management issues and has compiled extensive files on relevant agencies, people, and legislation. Under her direction a network for information exchange on coastal zone management matters has been developed throughout

the State of Michigan and, to a lesser extent, throughout the Great Lake states. This network incorporates federal, state, and local government agencies, universities, and private organizations. Mrs. Alexander is also a Research Associate at The University of Michigan's Coastal Zone Laboratory.

A number of other established consultants and reviewers will be used to examine and augment certain portions of each task effort. While it is not possible to specify exactly which consultants will participate in what specific efforts at this time, experts in each subject area will be used, based upon their past accomplishments, their present availability within the constraints of the work schedule, their ability to adjust to the practical constraints of real-world coastal zone management issues, and the confirmation of the Office of Coastal Zone Management. Specific arrangements for consultants and reviewers for each information document will be developed in the first month of work. A list of consultants with which discussions have been held is available upon request.

APPENDIX C

BUDGET BREAKDOWNS

BUDGET BREAKDOWN

Coastal Water Management

PROFESSIONAL FEES

Information Gathering and Compilation

C. Alexander - 3 weeks

Technical Analysis and Writing

Peter Ryner - 13 weeks
Reviewers & Consultants - 4 weeks

Final Draft Review

J. Armstrong - 2 weeks

Total man-weeks 22

Average corporate billing rate $200/day

TOTAL FEES		$22,000.00
TRAVEL		
3 trips to Washington, DC & associated expenses (2 people)	$1,500.00	
3 trips to other states & travel for consultants to gather information	2,800.00	
TOTAL TRAVEL		4,300.00
MANUSCRIPT TYPING AND RELATED EXPENSES		800.00
SUPPLIES AND TELEPHONE		1,800.00
DOCUMENT PURCHASE		600.00
MISCELLANEOUS EXPENSES		500.00
TOTAL DIRECT COST		$30,000.00

BUDGET BREAKDOWN

Standards As A Management Tool

PROFESSIONAL FEES

Information Gathering and Compilation

C. Alexander - 3 weeks

Technical Analysis and Writing

P. Ryner - 5 weeks
Consultants - 3 weeks
J. Armstrong - 1 week

Final Draft Review

P. Ryner - 1 week
J. Armstrong - 1 week

Total man-weeks 14

Average corporate billing rate $200/day

TOTAL FEES		$14,000.00
TRAVEL		
2 trips to Washington, DC & associated expenses (2 people)	$1,100.00	
3 trips to other states & consultant travel to Ann Arbor	2,500.00	
TOTAL TRAVEL		3,600.00
MANUSCRIPT TYPING AND RELATED EXPENSES		700.00
SUPPLIES AND TELEPHONE		1,300.00
DOCUMENT PURCHASE		400.00
MISCELLANEOUS EXPENSES		500.00
TOTAL DIRECT COST		$20,500.00

BUDGET BREAKDOWN

Suitability/Capability Analysis

PROFESSIONAL FEES

Information Gathering and Compilation

C. Alexander - 2 weeks

Technical Analysis and Writing

Peter Ryner - 10 weeks
Reviewers and Consultants - 3 weeks
J. Armstrong - 1 week

Final Draft Review

J. Armstrong - 1 week

Total man-weeks 17

Average corporate billing rate $200/day

TOTAL FEES		$17,000.00
TRAVEL		
2 trips to Washington, DC & associated expenses (2 people)	$1,000.00	
trips to two states and travel for consultants	1,800.00	
TOTAL TRAVEL		2,800.00
MANUSCRIPT TYPING AND RELATED EXPENSES		500.00
SUPPLIES AND TELEPHONE		1,000.00
DOCUMENT PURCHASE		500.00
MISCELLANEOUS EXPENSES		500.00
TOTAL DIRECT COST		$22,300.00

BUDGET BREAKDOWN

Ports and Harbors

PROFESSIONAL FEES

Information Gathering and Compilation

C. Alexander - 2 weeks

Technical Analysis and Writing

Subcontract to Consultants
for Preparation - 6 weeks
Peter Ryner - 3 weeks
J. Armstrong - 1 week

Final Draft Review

J. Armstrong - 1 week
Peter Ryner - 2 weeks

Total man-weeks 15

Average corporate billing rate $200/day

TOTAL FEES		$15,000.00
TRAVEL		
1 trip to Washington, DC & associated expenses (2 people) plus trips to two states	$1,200.00	
Consultant travel to Ann Arbor	1,500.00	
TOTAL TRAVEL		2,700.00
MANUSCRIPT TYPING AND RELATED EXPENSES		700.00
SUPPLIES AND TELEPHONE		1,100.00
DOCUMENT PURCHASE		500.00
MISCELLANEOUS EXPENSES		500.00
TOTAL DIRECT COST		$20,500.00

BUDGET BREAKDOWN

Energy Facility Siting

PROFESSIONAL FEES

Information Gathering and Compilation

C. Alexander - 3 weeks

Literature Review, Technical Analysis and Writing

Peter Ryner - 6 weeks
Reviewers and Other Consultants - 4 weeks
J. Armstrong - 1 week

Final Draft Preparation and Review

J. Armstrong - 1 week
Consultants - 2 weeks

Total man-weeks 17

Average corporate billing rate $200/day

TOTAL FEES		$17,000.00
TRAVEL		
3 trips to Washington, DC & associated expenses (2 people)	$1,500.00	
3 trips to other states & travel for consultants to gather information	2,800.00	
TOTAL TRAVEL		4,300.00
MANUSCRIPT TYPING AND RELATED EXPENSES		800.00
SUPPLIES AND TELEPHONE		1,500.00
DOCUMENT PURCHASE		2,000.00
MISCELLANEOUS EXPENSES		600.00
TOTAL DIRECT COST		$26,200.00

BUDGET BREAKDOWN

OCZM Information System Analysis

PROFESSIONAL FEES

Technical Information Consultant

C. Alexander - 5 weeks
P. Ryner - 2 weeks
J. Armstrong - 1 week

Total man-weeks 8 weeks

Average corporate billing rate $200/day

TOTAL FEES		$8,000.00
TRAVEL		
3 trips to Washington, DC & associated expenses (2 people)	$1,000.00	
TOTAL TRAVEL		1,000.00
MANUSCRIPT TYPING AND RELATED EXPENSES		300.00
SUPPLIES AND TELEPHONE		500.00
TOTAL DIRECT COST		$9,800.00

BUDGET BREAKDOWN

Summary

Coastal Water Management	$30,000.00
Standards As a Management Tool	20,500.00
Suitability/Capability Analysis	22,300.00
Ports and Harbors	20,500.00
Energy Facilities Siting	26,200.00
OCZM Information System Analysis	9,800.00
TOTAL DIRECT COSTS	$129,300.00
Overhead Charges (23% of Direct Charges, assuming all 6 areas funded)	20,650.00
TOTAL COST	$158,950.00

BUDGET BREAKDOWN

Overhead Charges

These are overhead charges necessary to carry out the proposed program of work and amount to 23% of the total direct cost estimated to produce the documents--or, $29,650.00.

Charges for Office Space

Including heat, light, share of furniture and janitorial services, insurance, etc. (2 corporate offies, Traverse City and Ann Arbor)	$8,500.00

Equipment Charges

Typewriter, Xerox, calculator, etc.	1,800.00

Supplies (other than indicated in document cost estimate)

Including Xeroxing charges for each project, postage, etc.	2,200.00

Secretarial Charges

For all project document work.	8,500.00

Administrative Costs

Bookkeeping, equipment repair, management fees, etc.	1,850.00

Administrative Travel

7 trips to Traverse City 3 trips to Washington, DC (not related to specific document preparation)	1,800.00

Technical Editor Consulting Fees

For time spent on all subject documents.	3,000.00

Technical Illustration and Graphic Consultant

For time spent on all subject documents.	2,000.00